

MEEN 1000 – Discover Mechanical and Energy Engineering Spring 2021

Instructor(s):

Mr. Robert P Smith
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Office: Remote/ZOOM

Office Hours: Tu/Th 1:00 - 2:20 PM or by appointment

Class Schedule:

Section 1: MW 2:30 PM – 3:20 PM via ZOOM lecture

Optional Textbook:

Engineering Ethics – Concepts & Cases, 4th Edition, Wadsworth Publishing, 2008
Charles E. Harris, Michael S. Pritchard, Michael J. Rabins
ISBN-13: 978-1-133-93468-4

Catalog Course Description:

Discovery Core course in Mechanical and Energy Engineering (MEE) which also serves as the heart of the MEE first year experience. Topics include experiences of practicing engineers; engineering ethics, professional conduct and values; and an introduction to the principle disciplines of MEE taught through a hands-on, energy-concentrated project. The project is a major, team-based, competitive engineering design-and-build effort. The course teaches students to think critically and creatively by applying a range of analysis techniques borrowed from many engineering and science disciplines.

Prerequisite(s): MATH 1650 (with grade of C or better).

Required for the BS degree in Mechanical and Energy Engineering at UNT.

Course Objectives:

1. Give an understanding of engineering ethics and professionalism.
2. Allow students to gain insight into engineering through invited guest lecturers.
3. Teach problem solving skills useful in engineering.
4. Gain an understanding of engineering and mathematics fundamentals.
5. Gain experience working in teams.
6. Apply learned knowledge through a team-based project.
7. Learn what resources and facilities are available in the MEEN department and Discovery Park.
8. Gain an understanding of formatting for scientific reports

ABET Criteria:

MEEN 1000 addresses the following ABET program outcomes:

- a) Apply knowledge of mathematics, engineering and science
- c) Develop project-based learning skills through design and implementation of a system
- d) Function in multi-disciplinary teams
- e) Identify, formulate and solve engineering problems
- f) Have an understanding of professional and ethical responsibility
- g) Communicate effectively
- h) Achieve broad education necessary to understand the impact of mechanical and energy engineering solutions in a global and societal context
- j) Achieve knowledge of contemporary issues
- k) Use techniques, skills and computer-based tools for conducting experiments and carrying out designs

Disability Policy:

All reasonable accommodations will be made to facilitate special needs. If special accommodations are required, the student must first meet with the staff of the Office of Disability Accommodation (ODA), (940) 565-4323. After meeting with that office, please contact me to discuss what accommodations will be necessary. For more information, see <http://www.unt.edu/oda>.

Attendance:

Responsibility for class attendance rests with the student. Attendance at all class meetings is expected. Attendance surveys will be taken throughout the semester and it is the student's responsibility to ensure signing attendance survey during class. Per University policy 06.039, an absence may be excused for the following reasons: religious holy day, including travel for that purpose; active military service, including travel for that purpose; participation in an official university function; illness or other extenuating circumstances; pregnancy and parenting under Title IX; and when University is officially closed. It is the student's responsibility to provide satisfactory evidence to receive an excused absence.

Assignments:

Assignments will be posted in Canvas and are due on the date given on the assignment. Submission instructions can vary per assignment but must be followed to receive credit. No late assignments will be accepted. It is the student's responsibility to check and see what assignment is available and submit them on time.

Projects:

Three team-based projects will also be assigned:

Project 1: Teams will consist of 4-5 students. Each team will research a mechanical engineering field of focus of their choice. Each team will create a poster of how that field of focus effects the world we live in.

Project 2: Teams will consist of 4-5 students. Each Team will research an energy production facility such as a windfarm, solar farm, hydroelectric dam, power plant, etc. Each team will create a poster of how that facility provides energy to its surroundings and its impact.

Project 3: Teams will consist of 4-5 students. Teams will design and construct a mechanism from simple machines. The team must explain the forces and how the machine works in a report. (This project may be modified to accommodate a remote-only format).

Grade Evaluation:

Assignments	30%
Project 1	15%
Project 2	15%
Project 3	20%
Attendance	20%

A – 90-100%
B – 80-89%
C – 70-79%
D – 60-69%
F - < 60%

Grades in this class will **not** be curved.

Subject Matter for the Course: (topics may or may not be covered depending on time)

Engineering Ethics
Spreadsheets for Engineering
Engineering Disciplines
Mathematics Review
Unit Conversions
Engineering Communications
Intro to Engineering Design
Intro to Engineering Economics

Academic Integrity Standards and Consequences

According to UNT Policy 06.003, Student Academic Integrity, academic dishonesty occurs when students engage in behaviors including, but not limited to cheating, fabrication, facilitating academic dishonesty, forgery, plagiarism, and sabotage. A finding of academic dishonesty may result in a range of academic penalties or sanctions ranging from admonition to expulsion from the University. [Insert specific sanction or academic penalty for specific academic integrity violation].

Emergency Notification & Procedures

UNT uses a system called Eagle Alert to quickly notify students with critical information in the event of an emergency (i.e., severe weather, campus closing, and health and public safety emergencies like chemical spills, fires, or violence). In the event of a university closure, please refer to Canvas for contingency plans for covering course materials.

Syllabus Changes

The Instructor reserves the right change the syllabus. Any changes will be announced in class and posted to Canvas with an accompanying email to the student's UNT email address.